WHAT IS CLAIMED:

A1

26. (New) A method of inhibiting the transcription of a gene, said gene comprising a nucleic acid sequence encoding a gene product operably linked to a promoter nucleic acid sequence, the method comprising:

contacting said gene with a polyamide molecule comprising (i) at least six carboxamide residues comprising a pyrrole or imidazole ring, (ii) at least two aliphatic residues selected from the group consisting of glycine, β-alanine, γ-aminobutyric acid, R-2,4-diaminobutyric acid, and 5-aminovaleric acid, and (iii) at least one terminal alkylamino residue, wherein said polyamide molecule is configured and arranged to bind in a sequence specific manner to a target nucleic acid sequence present in said gene, under conditions such that said polyamide molecule inhibits transcription of said gene.

27. (New) A method according to claim 26, wherein each said carboxamide residue independently selected from the group consisting of 3-hydroxy-N-methylypyrrole (Hp), N-methylimidazole (Im), and N-methylpyrrole (Py).

28. (New) A method according to claim 26, wherein said polyamide molecule comprises a first set of carboxamide residues and a second set of carboxamide residues, wherein said first and second sets of residues are separated by an aliphatic residue, wherein each carboxamide residue in said first set forms a complementary pair with a carboxamide residue in said second set, and wherein each said complementary pair is selected to correspond to a base pair in said target nucleic acid sequence.

29. (New) A method according to claim 28, wherein each said complementary pair is selected to correspond to said base pair by selecting Im/Py to correspond to a G/C base pair, Py/Im to correspond to a C/G base pair, Hp/Py to correspond to an A/T base pair, Py/Hp to correspond to a T/A base pair, Py/Py to correspond to an A/T base pair, or Py/Py to correspond to a T/A base pair.

30. (New) A method according to claim 26, wherein said polyamide molecule comprises a first set of residues, each of which is independently a carboxamide residue or an aliphatic residue, and a second set of residues, each of which is independently a carboxamide residue or an aliphatic residue, wherein said first and second sets of residues are separated by an aliphatic residue, wherein each residue in said first set forms a complementary pair with a residue in said second set, and wherein each said complementary pair is selected to correspond to a base pair in said target nucleic acid sequence.

31. (New) A method according to claim 30, wherein each said complementary pair is selected to correspond to said base pair by selecting Im/Py to correspond to a G/C base pair, Py/Im to correspond to a C/G base pair, Hp/Py to correspond to an A/T base pair, Py/Hp to correspond to a T/A base pair, Py/Py to correspond to an A/T base pair, Py/Py to correspond to a T/A base pair, β-alanine/β-alanine to correspond to an A/T base pair, or β-alanine/β-alanine to correspond to a T/A base pair.

32. (New) A method according to claim 28 or 29, wherein said aliphatic residue separating said first and second sets of carboxamide residues is R-2,4-diaminobutyric acid.

33. (New) A method according to claim 30 or 31, wherein said aliphatic residue separating said first and second sets of residues is R-2,4-diaminobutyric acid.

34. (New) A method according to claim 26, wherein at least one of said aliphatic residues is β-alanine.

35. (New) A method according to claim 26, wherein said terminal alkylamino residue is an N,N-dimethylaminopropyl residue.

36. (New) A method according to claim 26, wherein said polyamide molecule binds to said target nucleic acid sequence with a binding affinity of at least 10^9 M^{-1}.

37. (New) A method according to claim 26, wherein said target nucleic acid sequence is within said promoter nucleic acid sequence.

38. (New) A method according to claim 26, wherein said gene is present within a cell when said gene is contacted with said polyamide molecule.

39. (New) A method according to claim 38

39. (New) A method according to claim 38, wherein said polyamide molecule is cell permeable.

40. (New) A method according to claim 26, wherein said polyamide molecule is provided in a pharmaceutical composition.

REMARKS

Reconsideration and allowance of all of the claims now presently pending in the subject application are earnestly solicited.

Should any fees be deemed necessary, the Commissioner is hereby authorized to charge deposit account no.: 05-0872 for any such fees.

Dated: 11/21/2001

Respectfully submitted,

FOLEY & LARDNER

By: _____
MICHAEL A. WHITTAKER
Attorney for Applicant
Registration No. 46,230

FOLEY & LARDNER
P.O. Box 80278
San Diego, California 92138-0278
Telephone: (858) 847-6721
Facsimile: (858) 792-6773